What is claimed is:

1. An isolated polypeptide comprising an amino acid sequence which has at least 80% identity to the amino acid sequence of SEQ ID NO:2 over the entire length of SEQ ID NO:2.

2. An isolated polypeptide as claimed in claim 1 in which the amino acid sequence has at least 90% identity.

3. An isolated polypeptide as claimed in claim 1 in which the amino acid sequence has at least 95% identity.

4. The polypeptide as claimed in claim 1 which comprises the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:4.

5. ~~The polypeptide of SEQ ID NO:2 or SEQ ID NO:4.~~

6. An isolated polynucleotide comprising a nucleotide sequence that has at least 80% identity to a nucleotide sequence encoding the polypeptide of SEQ ID NO:2 over the entire coding region; or a nucleotide sequence complementary to said isolated polynucleotide.

7. An isolated polynucleotide as claimed in claim 6 in which the nucleotide sequence has at least 90% identity.

8. An isolated polynucleotide as claimed in claim 6 in which the nucleotide sequence that has at least 95% identity.

9. An isolated polynucleotide which comprises the nucleotide sequence contained in SEQ ID NO:1 encoding the polypeptide of SEQ ID NO2; or a nucleotide sequence complementary to said isolated polynucleotide.

10. An isolated polynucleotide which comprises a nucleotide sequence which has at least 80% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO:1; or a nucleotide sequence complementary to said isolated polynucleotide.

11. An isolated polynucleotide as claimed in claim 10 in which the nucleotide sequence which has at least 90% identity.

12. An isolated polynucleotide as claimed in claim 10 in which the nucleotide sequence which has at least 95% identity.

13. The polynucleotide of claim 10 which is the polynucleotide of SEQ ID NO: 1 or SEQ ID NO:3.

14. A DNA or RNA molecule comprising an expression system which is capable of producing a polypeptide comprising an amino acid sequence which has at least 80% identity with the polypeptide of SEQ ID NO:2 when said expression system is present in a compatible host cell.

15. A host cell comprising the expression system of claim 14.

16. A process for producing a polypeptide comprising culturing a host of claim 14 under conditions sufficient for the production of said polypeptide and recovering the polypeptide from the culture.

17. An antibody immunospecific for the polypeptide of claim 1.

18. A method for the treatment of a subject in need of enhanced activity or expression of the polypeptide of claim 1 comprising:

(a) administering to the subject a therapeutically effective amount of an agonist to said polypeptide; and/or

(b) providing to the subject an isolated polynucleotide comprising a nucleotide sequence that has at least 80% identity to a nucleotide sequence encoding the polypeptide of SEQ

ID NO:2 over the entire length of the encoding region; or a nucleotide sequence complementary to said nucleotide sequence in a form so as to effect production of said polypeptide activity *in vivo*.

19. A method for the treatment of a subject having need to inhibit activity or expression of the polypeptide of claim 1 comprising:

(a) administering to the subject a therapeutically effective amount of an antagonist to said polypeptide; and/or

(b) administering to the subject a nucleic acid molecule that inhibits the expression of the nucleotide sequence encoding said polypeptide; and/or

(c) administering to the subject a therapeutically effective amount of a polypeptide that competes with said polypeptide for its ligand, substrate, or receptor.

20. A process for diagnosing a disease or a susceptibility to a disease in a subject related to expression or activity of the polypeptide of claim 1 in a subject comprising:

(a) determining the presence or absence of a mutation in the nucleotide sequence encoding said polypeptide in the genome of said subject; and/or

(b) analyzing for the presence or amount of said polypeptide expression in a sample derived from said subject.

21. An agonist of the polypeptide of claim 1.

22. An antagonist of the polypeptide of claim 1.

23. ~~A GDNF alpha 3 receptor characterised by the deduced amino acid sequence of SEQ ID NO:6; or a fragment thereof.~~

24. A polypeptide which has the amino acid sequence of SEQ ID NO:6

25. A polynucleotide which encodes a polypeptide characterised by the deduced amino acid sequence of SEQ ID NO:6.

26. A polynucleotide comprising the partial DNA sequence given in SEQ ID NO:5.

27. The polynucleotide which has the sequence given in SEQ ID NO:5.